



## SEQUENCE LISTING

<110> YAO, Yong  
CAO, Liang

<120> Novel Cell-Based Assays for G-Protein-Coupled Receptor-Mediated Activities

<130> 40960-5001-US

<140> US 10/087,217

<141> 2002-03-04

<150> 60/330,663

<151> 2001-10-26

<160> 19

<170> PatentIn version 3.1

<210> 1

<211> 1995

<212> DNA

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Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly	
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Asp	Pro	Lys	Lys	Leu	Arg	Asp	Asn	Tyr	Ile	His	Thr	Leu	Gln	Phe	Lys	210	215	220	
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Gly	Ile	His	Ser	Pro	Glu	Val	Arg	Phe	Asn	Arg	Leu	Leu	His	Phe	Ala	245	250	255	
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305					310					315					320
Tyr	Leu	Ala	Arg	Glu	Tyr	Ile	Tyr	Cys	Leu	Tyr	Trp	Ser	Thr	Leu	Thr
				325					330					335	
Leu	Thr	Thr	Ile	Gly	Glu	Thr	Pro	Pro	Pro	Val	Lys	Asp	Glu	Glu	Tyr
			340					345					350		
Leu	Phe	Val	Ile	Phe	Asp	Phe	Leu	Ile	Gly	Val	Leu	Ile	Phe	Ala	Thr
	355						360					365			
Ile	Val	Gly	Asn	Val	Gly	Ser	Met	Ile	Ser	Asn	Met	Asn	Ala	Thr	Arg
370						375					380				
Ala	Glu	Phe	Gln	Ala	Lys	Ile	Asp	Ala	Val	Lys	His	Tyr	Met	Gln	Phe
385					390					395					400
Arg	Lys	Val	Ser	Lys	Asp	Met	Glu	Ala	Lys	Val	Ile	Lys	Trp	Phe	Asp
				405					410					415	
Tyr	Leu	Trp	Thr	Asn	Lys	Lys	Thr	Val	Asp	Glu	Arg	Glu	Val	Leu	Lys
			420					425					430		
Asn	Leu	Pro	Ala	Lys	Leu	Arg	Ala	Glu	Ile	Ala	Ile	Asn	Val	His	Leu
	435						440					445			
Ser	Thr	Leu	Lys	Lys	Val	Arg	Ile	Phe	Gln	Asp	Cys	Glu	Ala	Gly	Leu
450						455					460				
Leu	Val	Glu	Leu	Val	Leu	Lys	Leu	Arg	Pro	Gln	Val	Phe	Ser	Pro	Gly
465					470					475					480
Asp	Tyr	Ile	Cys	Arg	Lys	Gly	Asp	Ile	Gly	Lys	Glu	Met	Tyr	Ile	Ile
				485					490					495	
Lys	Glu	Gly	Lys	Leu	Ala	Val	Val	Ala	Asp	Asp	Gly	Val	Thr	Gln	Tyr
			500					505					510		
Ala	Leu	Leu	Ser	Ala	Gly	Ser	Cys	Phe	Gly	Glu	Ile	Ser	Ile	Leu	Asn
	515						520					525			
Ile	Lys	Gly	Ser	Lys	Met	Gly	Asn	Arg	Arg	Thr	Ala	Asn	Ile	Arg	Ser
530						535					540				
Leu	Gly	Tyr	Ser	Asp	Leu	Phe	Cys	Leu	Ser	Lys	Asp	Asp	Leu	Met	Glu
545					550					555					560
Ala	Val	Thr	Glu	Ala	Pro	Asp	Ala	Lys	Lys	Val	Leu	Glu	Glu	Arg	Gly
				565					570					575	
Arg	Glu	Ile	Leu	Met	Lys	Glu	Gly	Leu	Leu	Asp	Glu	Asn	Glu	Val	Ala

580	585	590
Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr		
595	600	605
Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr		
610	615	620
Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr		
625	630	635
Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn		
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Thr Pro Glu Pro Thr Ala Ala Glu		
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cat aac cat cat cct cct cct tct atc aag gcc aat ggc aaa gat gac	96
His Asn His His Pro Pro Pro Ser Ile Lys Ala Asn Gly Lys Asp Asp	
20 25 30	
cac agg gca gga agc aga cca cag tct gtg gca gct gat gat gac act	144
His Arg Ala Gly Ser Arg Pro Gln Ser Val Ala Ala Asp Asp Asp Thr	
35 40 45	
tct cca gaa cta caa agg ctg gca gag atg gat acc cct cgg agg ggg	192
Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly	
50 55 60	
agg ggt ggc ttc caa agg att gtt cgc ctg gtg ggg gtc atc agg gac	240
Arg Gly Gly Phe Gln Arg Ile Val Arg Leu Val Gly Val Ile Arg Asp	
65 70 75 80	
tgg gcc aac aag aat ttc cgt gaa gag gaa cca agg cct gac tcc ttc	288
Trp Ala Asn Lys Asn Phe Arg Glu Glu Glu Pro Arg Pro Asp Ser Phe	
85 90 95	
cta gag cgt ttc cgt ggg cca gaa ctc cag act gtg aca acc cat cag	336
Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr His Gln	
100 105 110	

ggg gat gac aaa ggc ggc aag gac ggc gag gga aag ggc acc aaa aag Gly Asp Asp Lys Gly Gly Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys 115 120 125	384
aaa ttt gaa ctg ttt gtt ttg gac cca gcc gga gac tgg tat tac cgt Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg 130 135 140	432
tgg ttg ttt gtc att gcc atg cct gtt ctt tac aac tgg tgc ctg ttg Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu 145 150 155 160	480
gtg gcc aga gcc tgc ttc agt gat cta cag aga aac tat ttt gtg gta Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Asn Tyr Phe Val Val 165 170 175	528
tgg ctg gtg ctg gac tac ttc tca gac act gtc tat atc gca gac ctc Trp Leu Val Leu Asp Tyr Phe Ser Asp Thr Val Tyr Ile Ala Asp Leu 180 185 190	576
atc att cgg ctg cgc aca ggc ttc cta gaa cag ggg ctc ttg gtc aaa Ile Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys 195 200 205	624
gat ccc aag aaa ttg cga gac aac tat att cac act ttg cag ttc aaa Asp Pro Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys 210 215 220	672
ttg gat gtg gct tct atc att ccc act gac ctt atc tat ttt gct gtg Leu Asp Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val 225 230 235 240	720
ggt atc cac agc cct gag gta cgc ttc aac cgt cta tta cac ttt gcc Gly Ile His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala 245 250 255	768
cgt atg ttt gag ttc ttt gac cgc act gag aca cgc acc agc tac ccc Arg Met Phe Glu Phe Phe Asp Arg Thr Glu Thr Arg Thr Ser Tyr Pro 260 265 270	816
aac atc ttc cga atc agc aat ctg gtc ctt tac atc ttg gtc atc atc Asn Ile Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile 275 280 285	864
cac tgg aat gct tgt att tat tat gtt att tct aag tcc att ggc ttt His Trp Asn Ala Cys Ile Tyr Tyr Val Ile Ser Lys Ser Ile Gly Phe 290 295 300	912
gga gtt gac acc tgg gtt tac ccc aac att act gac cct gaa tat ggc Gly Val Asp Thr Trp Val Tyr Pro Asn Ile Thr Asp Pro Glu Tyr Gly 305 310 315 320	960
tac ctg gct aga gag tac att tac tgt ctt tac tgg tcc aca ctg acc Tyr Leu Ala Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr 325 330 335	1008
ctc acc acc att gga gag aca cca ccc cct gta aag gat gag gag tac	1056

Leu Thr Thr Ile Gly Glu Thr Pro Pro Pro Val Lys Asp Glu Glu Tyr	
340 345 350	
cta ttt gtc atc ttt gac ttc ttg att ggt gtc ctc atc ttt gcc act	1104
Leu Phe Val Ile Phe Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr	
355 360 365	
att gtg gga aat gtg ggc tcc atg atc tcc aac atg aat gcc aca cga	1152
Ile Val Gly Asn Val Gly Ser Met Ile Ser Asn Met Asn Ala Thr Arg	
370 375 380	
gca gag ttc cag gcc aag att gat gct gtc aaa cac tac atg cag ttc	1200
Ala Glu Phe Gln Ala Lys Ile Asp Ala Val Lys His Tyr Met Gln Phe	
385 390 395 400	
cga aag gtc agc aaa gac atg gaa gcc aag gtc atc aaa tgg ttt gac	1248
Arg Lys Val Ser Lys Asp Met Glu Ala Lys Val Ile Lys Trp Phe Asp	
405 410 415	
tac ttg tgg acc aat aag aag aca gta gat gaa cga gaa gtc ctc aag	1296
Tyr Leu Trp Thr Asn Lys Lys Thr Val Asp Glu Arg Glu Val Leu Lys	
420 425 430	
aac ctg cca gca aag ctc agg gct gag ata gcc att aat gtt cac ttg	1344
Asn Leu Pro Ala Lys Leu Arg Ala Glu Ile Ala Ile Asn Val His Leu	
435 440 445	
tcc act ctg aag aaa gtg cgc ata ttc cag gat tgg gaa gct ggc cta	1392
Ser Thr Leu Lys Lys Val Arg Ile Phe Gln Asp Trp Glu Ala Gly Leu	
450 455 460	
ctg gtg gaa ctg gta ctg aag ctt cgt cct cag gtc ttt agt cct gga	1440
Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Phe Ser Pro Gly	
465 470 475 480	
gat tat att tgc cgt aag ggg gac att ggc aag gaa atg tac atc atc	1488
Asp Tyr Ile Cys Arg Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile	
485 490 495	
aag gag ggc aag ttg gca gtg gta gct gat gat ggc gtg act cag tat	1536
Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr	
500 505 510	
gcc ttg ctc tca gct ggg agc tgc ttt ggt gag att agt atc ctt aac	1584
Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile Leu Asn	
515 520 525	
att aag ggt agc aaa atg ggc aat cga cgt act gct aat atc cgt agc	1632
Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Ala Asn Ile Arg Ser	
530 535 540	
ctg ggc tac tca gat ctc ttc tgc ttg tcc aag gac gat ctt atg gaa	1680
Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu	
545 550 555 560	
gct gta act gag tat cct gat gcc aag aag gtc ctg gag gaa cgg ggt	1728
Ala Val Thr Glu Tyr Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly	

565	570	575	
agg gag atc ctg atg aag atg ggt cta ctg gat gag aat gaa gtg gca			1776
Arg Glu Ile Leu Met Lys Met Gly Leu Leu Asp Glu Asn Glu Val Ala			
580	585	590	
gct agt atg gag gta gat gtt cag gag aag ctg gaa cag ttg gag aca			1824
Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr			
595	600	605	
aac atg gat acc ttg tac act cgc ttt gcc cgc ctg ctg gct gag tac			1872
Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr			
610	615	620	
act ggg gcc cag cag aag ctc aag caa cgc atc aca gtg cta gag acc			1920
Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr			
625	630	635	640
aag atg aaa cag aac cat gag gat gat tat cta tca gat ggg ata aac			1968
Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn			
645	650	655	
act cct gag cca act gct gct gaa taa			1995
Thr Pro Glu Pro Thr Ala Ala Glu			
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His Arg Ala Gly Ser Arg Pro Gln Ser Val Ala Ala Asp Asp Asp Thr			
35	40	45	
Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly			
50	55	60	
Arg Gly Gly Phe Gln Arg Ile Val Arg Leu Val Gly Val Ile Arg Asp			
65	70	75	80
Trp Ala Asn Lys Asn Phe Arg Glu Glu Glu Pro Arg Pro Asp Ser Phe			
85	90	95	
Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr His Gln			
100	105	110	
Gly Asp Asp Lys Gly Gly Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys			
115	120	125	

Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg  
 130 135 140  
 Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu  
 145 150 155 160  
 Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Asn Tyr Phe Val Val  
 165 170 175  
 Trp Leu Val Leu Asp Tyr Phe Ser Asp Thr Val Tyr Ile Ala Asp Leu  
 180 185 190  
 Ile Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys  
 195 200 205  
 Asp Pro Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys  
 210 215 220  
 Leu Asp Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val  
 225 230 235 240  
 Gly Ile His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala  
 245 250 255  
 Arg Met Phe Glu Phe Phe Asp Arg Thr Glu Thr Arg Thr Ser Tyr Pro  
 260 265 270  
 Asn Ile Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile  
 275 280 285  
 His Trp Asn Ala Cys Ile Tyr Tyr Val Ile Ser Lys Ser Ile Gly Phe  
 290 295 300  
 Gly Val Asp Thr Trp Val Tyr Pro Asn Ile Thr Asp Pro Glu Tyr Gly  
 305 310 315 320  
 Tyr Leu Ala Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr  
 325 330 335  
 Leu Thr Thr Ile Gly Glu Thr Pro Pro Pro Val Lys Asp Glu Glu Tyr  
 340 345 350  
 Leu Phe Val Ile Phe Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr  
 355 360 365  
 Ile Val Gly Asn Val Gly Ser Met Ile Ser Asn Met Asn Ala Thr Arg  
 370 375 380  
 Ala Glu Phe Gln Ala Lys Ile Asp Ala Val Lys His Tyr Met Gln Phe  
 385 390 395 400  
 Arg Lys Val Ser Lys Asp Met Glu Ala Lys Val Ile Lys Trp Phe Asp  
 405 410 415  
 Tyr Leu Trp Thr Asn Lys Lys Thr Val Asp Glu Arg Glu Val Leu Lys  
 420 425 430



Asn Leu Pro Ala Lys Leu Arg Ala Glu Ile Ala Ile Asn Val His Leu  
 435 440 445  
 Ser Thr Leu Lys Lys Val Arg Ile Phe Gln Asp Trp Glu Ala Gly Leu  
 450 455 460  
 Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Phe Ser Pro Gly  
 465 470 475 480  
 Asp Tyr Ile Cys Arg Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile  
 485 490 495  
 Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr  
 500 505 510  
 Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile Leu Asn  
 515 520 525  
 Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Ala Asn Ile Arg Ser  
 530 535 540  
 Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu  
 545 550 555 560  
 Ala Val Thr Glu Tyr Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly  
 565 570 575  
 Arg Glu Ile Leu Met Lys Met Gly Leu Leu Asp Glu Asn Glu Val Ala  
 580 585 590  
 Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr  
 595 600 605  
 Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr  
 610 615 620  
 Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr  
 625 630 635 640  
 Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn  
 645 650 655  
 Thr Pro Glu Pro Thr Ala Ala Glu  
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 <212> DNA  
 <213> Rattus norvegicus

<220>  
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cat aac cat cat cct cct cct tct atc aag gcc aat ggc aaa gat gac	96
His Asn His His Pro Pro Pro Ser Ile Lys Ala Asn Gly Lys Asp Asp	
20 25 30	
cac agg gca gga agc aga cca cag tct gtg gca gct gat gat gac act	144
His Arg Ala Gly Ser Arg Pro Gln Ser Val Ala Ala Asp Asp Asp Thr	
35 40 45	
tct cca gaa cta caa agg ctg gca gag atg gat acc cct cgg agg ggg	192
Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly	
50 55 60	
agg ggt ggc ttc caa agg att gtt cgc ctg gtg ggg gtc atc agg gac	240
Arg Gly Gly Phe Gln Arg Ile Val Arg Leu Val Gly Val Ile Arg Asp	
65 70 75 80	
tgg gcc aac aag aat ttc cgt gaa gag gaa cca agg cct gac tcc ttc	288
Trp Ala Asn Lys Asn Phe Arg Glu Glu Glu Pro Arg Pro Asp Ser Phe	
85 90 95	
cta gag cgt ttc cgt ggg cca gaa ctc cag act gtg aca acc cat cag	336
Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr His Gln	
100 105 110	
ggg gat gac aaa ggc ggc aag gac ggc gag gga aag ggc acc aaa aag	384
Gly Asp Asp Lys Gly Gly Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys	
115 120 125	
aaa ttt gaa ctg ttt gtt ttg gac cca gcc gga gac tgg tat tac cgt	432
Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg	
130 135 140	
tgg ttg ttt gtc att gcc atg cct gtt ctt tac aac tgg tgc ctg ttg	480
Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu	
145 150 155 160	
gtg gcc aga gcc tgc ttc agt gat cta cag aga aac tat ttt gtg gta	528
Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Asn Tyr Phe Val Val	
165 170 175	
tgg ctg gtg ctg gac tac ttc tca gac act gtc tat atc gca gac ctc	576
Trp Leu Val Leu Asp Tyr Phe Ser Asp Thr Val Tyr Ile Ala Asp Leu	
180 185 190	
atc att cgg ctg cgc aca ggc ttc cta gaa cag ggg ctc ttg gtc aaa	624
Ile Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys	
195 200 205	
gat ccc aag aaa ttg cga gac aac tat att cac act ttg cag ttc aaa	672
Asp Pro Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys	
210 215 220	
ttg gat gtg gct tct atc att ccc act gac ctt atc tat ttt gct gtg	720

Leu	Asp	Val	Ala	Ser	Ile	Ile	Pro	Thr	Asp	Leu	Ile	Tyr	Phe	Ala	Val		
225					230					235					240		
ggt	atc	cac	agc	cct	gag	gta	cgc	ttc	aac	cgt	cta	tta	cac	ttt	gcc		768
Gly	Ile	His	Ser	Pro	Glu	Val	Arg	Phe	Asn	Arg	Leu	Leu	His	Phe	Ala		
				245					250					255			
cgt	atg	ttt	gag	ttc	ttt	gac	cgc	act	gag	aca	cgc	acc	agc	tac	ccc		816
Arg	Met	Phe	Glu	Phe	Phe	Asp	Arg	Thr	Glu	Thr	Arg	Thr	Ser	Tyr	Pro		
			260					265					270				
aac	atc	ttc	cga	atc	agc	aat	ctg	gtc	ctt	tac	atc	ttg	gtc	atc	atc		864
Asn	Ile	Phe	Arg	Ile	Ser	Asn	Leu	Val	Leu	Tyr	Ile	Leu	Val	Ile	Ile		
		275					280					285					
cac	tgg	aat	gct	tgt	att	tat	tat	gtt	att	tct	aag	tcc	att	ggc	ttt		912
His	Trp	Asn	Ala	Cys	Ile	Tyr	Tyr	Val	Ile	Ser	Lys	Ser	Ile	Gly	Phe		
	290					295					300						
gga	gtt	gac	acc	tgg	gtt	tac	ccc	aac	att	act	gac	cct	gaa	tat	ggc		960
Gly	Val	Asp	Thr	Trp	Val	Tyr	Pro	Asn	Ile	Thr	Asp	Pro	Glu	Tyr	Gly		
305					310					315					320		
tac	ctg	gct	aga	gag	tac	att	tac	tgt	ctt	tac	tgg	tcc	aca	ctg	acc		1008
Tyr	Leu	Ala	Arg	Glu	Tyr	Ile	Tyr	Cys	Leu	Tyr	Trp	Ser	Thr	Leu	Thr		
				325				330						335			
ctc	acc	acc	att	gga	gag	aca	cca	ccc	cct	gta	aag	gat	gag	gag	tac		1056
Leu	Thr	Thr	Ile	Gly	Glu	Thr	Pro	Pro	Pro	Val	Lys	Asp	Glu	Glu	Tyr		
			340					345					350				
cta	ttt	gtc	atc	ttt	gac	ttc	ttg	att	ggc	gtc	ctc	atc	ttt	gcc	act		1104
Leu	Phe	Val	Ile	Phe	Asp	Phe	Leu	Ile	Gly	Val	Leu	Ile	Phe	Ala	Thr		
		355					360					365					
att	gtg	gga	aat	gtg	ggc	tcc	atg	atc	tcc	aac	atg	aat	gcc	aca	cga		1152
Ile	Val	Gly	Asn	Val	Gly	Ser	Met	Ile	Ser	Asn	Met	Asn	Ala	Thr	Arg		
	370					375					380						
gca	gag	ttc	cag	gcc	aag	att	gat	gct	gtc	aaa	cac	tac	atg	cag	ttc		1200
Ala	Glu	Phe	Gln	Ala	Lys	Ile	Asp	Ala	Val	Lys	His	Tyr	Met	Gln	Phe		
385					390					395				400			
cga	aag	gtc	agc	aaa	gac	atg	gaa	gcc	aag	gtc	atc	aaa	tgg	ttt	gac		1248
Arg	Lys	Val	Ser	Lys	Asp	Met	Glu	Ala	Lys	Val	Ile	Lys	Trp	Phe	Asp		
				405				410					415				
tac	ttg	tgg	acc	aat	aag	aag	aca	gta	gat	gaa	cga	gaa	gtc	ctc	aag		1296
Tyr	Leu	Trp	Thr	Asn	Lys	Lys	Thr	Val	Asp	Glu	Arg	Glu	Val	Leu	Lys		
			420					425					430				
aac	ctg	cca	gca	aag	ctc	agg	gct	gag	ata	gcc	att	aat	gtt	cac	ttg		1344
Asn	Leu	Pro	Ala	Lys	Leu	Arg	Ala	Glu	Ile	Ala	Ile	Asn	Val	His	Leu		
		435					440					445					
tcc	act	ctg	aag	aaa	gtg	cgc	ata	ttc	cag	gat	tgg	gaa	gct	ggc	cta		1392
Ser	Thr	Leu	Lys	Lys	Val	Arg	Ile	Phe	Gln	Asp	Trp	Glu	Ala	Gly	Leu		

450	455	460	
ctg gtg gaa ctg gta ctg aag ctt cgt cct cag gtc ttt agt cct gga			1440
Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Phe Ser Pro Gly			
465	470	475	480
gat tat att tgc cgt aag ggg gac att ggc aag gaa atg tac atc atc			1488
Asp Tyr Ile Cys Arg Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile			
	485	490	495
aag gag ggc aag ttg gca gtg gta gct gat gat ggc gtg act cag tat			1536
Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr			
	500	505	510
gcc ttg ctc tca gct ggg agc tgc ttt ggt gag att agt atc ctt aac			1584
Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile Leu Asn			
	515	520	525
att aag ggt agc aaa atg ggc aat cga cgt act gct aat atc cgt agc			1632
Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Ala Asn Ile Arg Ser			
	530	535	540
ctg ggc tac tca gat ctc ttc tgc ttg tcc aag gac gat ctt atg gaa			1680
Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu			
	545	550	555
gct gta act gag gct cct gat gcc aag aag gtc ctg gag gaa cgg ggt			1728
Ala Val Thr Glu Ala Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly			
	565	570	575
agg gag atc ctg atg aag atg ggt cta ctg gat gag aat gaa gtg gca			1776
Arg Glu Ile Leu Met Lys Met Gly Leu Leu Asp Glu Asn Glu Val Ala			
	580	585	590
gct agt atg gag gta gat gtt cag gag aag ctg gaa cag ttg gag aca			1824
Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr			
	595	600	605
aac atg gat acc ttg tac act cgc ttt gcc cgc ctg ctg gct gag tac			1872
Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr			
	610	615	620
act ggg gcc cag cag aag ctc aag caa cgc atc aca gtg cta gag acc			1920
Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr			
	625	630	635
aag atg aaa cag aac cat gag gat gat tat cta tca gat ggg ata aac			1968
Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn			
	645	650	655
act cct gag cca act gct gct gaa taa			1995
Thr Pro Glu Pro Thr Ala Ala Glu			
	660		

<210> 8  
 <211> 664

<212> PRT

<213> Rattus norvegicus

<400> 8

Met	Met	Thr	Glu	Lys	Ser	Asn	Gly	Val	Lys	Ser	Ser	Pro	Ala	Asn	Asn	
1				5					10					15		
His	Asn	His	His	Pro	Pro	Pro	Ser	Ile	Lys	Ala	Asn	Gly	Lys	Asp	Asp	
			20					25					30			
His	Arg	Ala	Gly	Ser	Arg	Pro	Gln	Ser	Val	Ala	Ala	Asp	Asp	Asp	Thr	
		35					40					45				
Ser	Pro	Glu	Leu	Gln	Arg	Leu	Ala	Glu	Met	Asp	Thr	Pro	Arg	Arg	Gly	
	50					55					60					
Arg	Gly	Gly	Phe	Gln	Arg	Ile	Val	Arg	Leu	Val	Gly	Val	Ile	Arg	Asp	
65					70				75						80	
Trp	Ala	Asn	Lys	Asn	Phe	Arg	Glu	Glu	Glu	Pro	Arg	Pro	Asp	Ser	Phe	
				85					90					95		
Leu	Glu	Arg	Phe	Arg	Gly	Pro	Glu	Leu	Gln	Thr	Val	Thr	Thr	His	Gln	
			100					105					110			
Gly	Asp	Asp	Lys	Gly	Gly	Lys	Asp	Gly	Glu	Gly	Lys	Gly	Thr	Lys	Lys	
		115					120					125				
Lys	Phe	Glu	Leu	Phe	Val	Leu	Asp	Pro	Ala	Gly	Asp	Trp	Tyr	Tyr	Arg	
	130					135					140					
Trp	Leu	Phe	Val	Ile	Ala	Met	Pro	Val	Leu	Tyr	Asn	Trp	Cys	Leu	Leu	
145					150					155					160	
Val	Ala	Arg	Ala	Cys	Phe	Ser	Asp	Leu	Gln	Arg	Asn	Tyr	Phe	Val	Val	
				165					170					175		
Trp	Leu	Val	Leu	Asp	Tyr	Phe	Ser	Asp	Thr	Val	Tyr	Ile	Ala	Asp	Leu	
			180					185					190			
Ile	Ile	Arg	Leu	Arg	Thr	Gly	Phe	Leu	Glu	Gln	Gly	Leu	Leu	Val	Lys	
		195					200					205				
Asp	Pro	Lys	Lys	Leu	Arg	Asp	Asn	Tyr	Ile	His	Thr	Leu	Gln	Phe	Lys	
	210					215					220					
Leu	Asp	Val	Ala	Ser	Ile	Ile	Pro	Thr	Asp	Leu	Ile	Tyr	Phe	Ala	Val	
225					230					235					240	
Gly	Ile	His	Ser	Pro	Glu	Val	Arg	Phe	Asn	Arg	Leu	Leu	His	Phe	Ala	
				245					250					255		
Arg	Met	Phe	Glu	Phe	Phe	Asp	Arg	Thr	Glu	Thr	Arg	Thr	Ser	Tyr	Pro	
			260					265					270			
Asn	Ile	Phe	Arg	Ile	Ser	Asn	Leu	Val	Leu	Tyr	Ile	Leu	Val	Ile	Ile	
		275					280					285				

His Trp Asn Ala Cys Ile Tyr Tyr Val Ile Ser Lys Ser Ile Gly Phe  
 290 295 300  
 Gly Val Asp Thr Trp Val Tyr Pro Asn Ile Thr Asp Pro Glu Tyr Gly  
 305 310 315 320  
 Tyr Leu Ala Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr  
 325 330 335  
 Leu Thr Thr Ile Gly Glu Thr Pro Pro Pro Val Lys Asp Glu Glu Tyr  
 340 345 350  
 Leu Phe Val Ile Phe Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr  
 355 360 365  
 Ile Val Gly Asn Val Gly Ser Met Ile Ser Asn Met Asn Ala Thr Arg  
 370 375 380  
 Ala Glu Phe Gln Ala Lys Ile Asp Ala Val Lys His Tyr Met Gln Phe  
 385 390 395 400  
 Arg Lys Val Ser Lys Asp Met Glu Ala Lys Val Ile Lys Trp Phe Asp  
 405 410 415  
 Tyr Leu Trp Thr Asn Lys Lys Thr Val Asp Glu Arg Glu Val Leu Lys  
 420 425 430  
 Asn Leu Pro Ala Lys Leu Arg Ala Glu Ile Ala Ile Asn Val His Leu  
 435 440 445  
 Ser Thr Leu Lys Lys Val Arg Ile Phe Gln Asp Trp Glu Ala Gly Leu  
 450 455 460  
 Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Phe Ser Pro Gly  
 465 470 475 480  
 Asp Tyr Ile Cys Arg Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile  
 485 490 495  
 Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr  
 500 505 510  
 Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile Leu Asn  
 515 520 525  
 Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Ala Asn Ile Arg Ser  
 530 535 540  
 Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu  
 545 550 555 560  
 Ala Val Thr Glu Ala Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly  
 565 570 575  
 Arg Glu Ile Leu Met Lys Met Gly Leu Leu Asp Glu Asn Glu Val Ala  
 580 585 590

Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr  
595 600 605

Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr  
610 615 620

Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr  
625 630 635 640

Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn  
645 650 655

Thr Pro Glu Pro Thr Ala Ala Glu  
660

<210> 9  
<211> 690  
<212> PRT  
<213> Homo sapiens

<220>  
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<222> (1)..(690)  
<223> CNGA1

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Met Lys Leu Ser Met Lys Asn Asn Ile Ile Asn Thr Gln Gln Ser Phe  
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Val Thr Met Pro Asn Val Ile Val Pro Asp Ile Glu Lys Glu Ile Arg  
20 25 30

Arg Met Glu Asn Gly Ala Cys Ser Ser Phe Ser Glu Asp Asp Asp Ser  
35 40 45

Ala Tyr Thr Ser Glu Glu Ser Glu Asn Glu Asn Pro His Ala Arg Gly  
50 55 60

Ser Phe Ser Tyr Lys Ser Leu Arg Lys Gly Gly Pro Ser Gln Arg Glu  
65 70 75 80

Gln Tyr Leu Pro Gly Ala Ile Ala Ile Phe Asn Val Asn Asn Ser Ser  
85 90 95

Asn Lys Asp Gln Glu Pro Glu Glu Lys Lys Lys Lys Lys Glu Lys  
100 105 110

Lys Ser Lys Ser Asp Asp Lys Asn Glu Asn Lys Asn Asp Pro Glu Lys  
115 120 125

Lys Lys Lys Lys Lys Asp Lys Glu Lys Lys Lys Lys Glu Glu Lys Ser  
130 135 140

Lys Asp Lys Lys Glu His His Lys Lys Glu Val Val Val Ile Asp Pro  
145 150 155 160

Ser Gly Asn Thr Tyr Tyr Asn Trp Leu Phe Cys Ile Thr Leu Pro Val  
 165 170 175  
 Met Tyr Asn Trp Thr Met Val Ile Ala Arg Ala Cys Phe Asp Glu Leu  
 180 185 190  
 Gln Ser Asp Tyr Leu Glu Tyr Trp Leu Ile Leu Asp Tyr Val Ser Asp  
 195 200 205  
 Ile Val Tyr Leu Ile Asp Met Phe Val Arg Thr Arg Thr Gly Tyr Leu  
 210 215 220  
 Glu Gln Gly Leu Leu Val Lys Glu Glu Leu Lys Leu Ile Asn Lys Tyr  
 225 230 235 240  
 Lys Ser Asn Leu Gln Phe Lys Leu Asp Val Leu Ser Leu Ile Pro Thr  
 245 250 255  
 Asp Leu Leu Tyr Phe Lys Leu Gly Trp Asn Tyr Pro Glu Ile Arg Leu  
 260 265 270  
 Asn Arg Leu Leu Arg Phe Ser Arg Met Phe Glu Phe Phe Gln Arg Thr  
 275 280 285  
 Glu Thr Arg Thr Asn Tyr Pro Asn Ile Phe Arg Ile Ser Asn Leu Val  
 290 295 300  
 Met Tyr Ile Val Ile Ile Ile His Trp Asn Ala Cys Val Phe Tyr Ser  
 305 310 315 320  
 Ile Ser Lys Ala Ile Gly Phe Gly Asn Asp Thr Trp Val Tyr Pro Asp  
 325 330 335  
 Ile Asn Asp Pro Glu Phe Gly Arg Leu Ala Arg Lys Tyr Val Tyr Ser  
 340 345 350  
 Leu Tyr Trp Ser Thr Leu Thr Leu Thr Thr Ile Gly Glu Thr Pro Pro  
 355 360 365  
 Pro Val Arg Asp Ser Glu Tyr Val Phe Val Val Val Asp Phe Leu Ile  
 370 375 380  
 Gly Val Leu Ile Phe Ala Thr Ile Val Gly Asn Ile Gly Ser Met Ile  
 385 390 395 400  
 Ser Asn Met Asn Ala Ala Arg Ala Glu Phe Gln Ala Arg Ile Asp Ala  
 405 410 415  
 Ile Lys Gln Tyr Met His Phe Arg Asn Val Ser Lys Asp Met Glu Lys  
 420 425 430  
 Arg Val Ile Lys Trp Phe Asp Tyr Leu Trp Thr Asn Lys Lys Thr Val  
 435 440 445  
 Asp Glu Lys Glu Val Leu Lys Tyr Leu Pro Asp Lys Leu Arg Ala Glu  
 450 455 460



Ile Ala Ile Asn Val His Leu Asp Thr Leu Lys Lys Val Arg Ile Phe  
 465 470 475 480  
 Ala Asp Cys Glu Ala Gly Leu Leu Val Glu Leu Val Leu Lys Leu Gln  
 485 490 495  
 Pro Gln Val Tyr Ser Pro Gly Asp Tyr Ile Cys Lys Lys Gly Asp Ile  
 500 505 510  
 Gly Arg Glu Met Tyr Ile Ile Lys Glu Gly Lys Leu Ala Val Val Ala  
 515 520 525  
 Asp Asp Gly Val Thr Gln Phe Val Val Leu Ser Asp Gly Ser Thr Phe  
 530 535 540  
 Gly Glu Ile Ser Ile Leu Asn Ile Lys Gly Ser Lys Ala Gly Asn Arg  
 545 550 555 560  
 Arg Thr Ala Asn Ile Lys Ser Ile Gly Tyr Ser Asp Leu Phe Cys Leu  
 565 570 575  
 Ser Lys Asp Asp Leu Met Glu Ala Leu Thr Glu Tyr Pro Asp Ala Lys  
 580 585 590  
 Thr Met Leu Glu Glu Lys Gly Lys Gln Ile Leu Met Lys Asp Gly Leu  
 595 600 605  
 Leu Asp Leu Asn Ile Ala Asn Ala Gly Ser Asp Pro Lys Asp Leu Glu  
 610 615 620  
 Glu Lys Val Thr Arg Met Glu Gly Ser Val Asp Leu Leu Gln Thr Arg  
 625 630 635 640  
 Phe Ala Arg Ile Leu Ala Glu Tyr Glu Ser Met Gln Gln Lys Leu Lys  
 645 650 655  
 Gln Arg Leu Thr Lys Val Glu Lys Phe Leu Lys Pro Leu Ile Asp Thr  
 660 665 670  
 Glu Phe Ser Ser Ile Glu Gly Pro Trp Ser Glu Ser Gly Pro Ile Asp  
 675 680 685  
 Ser Thr  
 690

<210> 10  
 <211> 664  
 <212> PRT  
 <213> Homo sapiens  
  
 <220>  
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 <222> (1)..(664)  
 <223> CNGA2

<400> 10

Met Thr Glu Lys Thr Asn Gly Val Lys Ser Ser Pro Ala Asn Asn His  
1 5 10 15

Asn His His Ala Pro Pro Ala Ile Lys Ala Asn Gly Lys Asp Asp His  
20 25 30

Arg Thr Ser Ser Arg Pro His Ser Ala Ala Asp Asp Asp Thr Ser Ser  
35 40 45

Glu Leu Gln Arg Leu Ala Asp Val Asp Ala Pro Gln Gln Gly Arg Ser  
50 55 60

Gly Phe Arg Arg Ile Val Arg Leu Val Gly Ile Ile Arg Glu Trp Ala  
65 70 75 80

Asn Lys Asn Phe Arg Glu Glu Glu Pro Arg Pro Asp Ser Phe Leu Glu  
85 90 95

Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr Gln Glu Gly Asp  
100 105 110

Gly Lys Gly Asp Lys Asp Gly Glu Asp Lys Gly Thr Lys Lys Lys Phe  
115 120 125

Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Cys Trp Leu  
130 135 140

Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu Val Ala  
145 150 155 160

Arg Ala Cys Phe Ser Asp Leu Gln Lys Gly Tyr Tyr Leu Val Trp Leu  
165 170 175

Val Leu Asp Tyr Val Ser Asp Val Val Tyr Ile Ala Asp Leu Phe Ile  
180 185 190

Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys Asp Thr  
195 200 205

Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys Leu Asp  
210 215 220

Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val Asp Ile  
225 230 235 240

His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala Arg Met  
245 250 255

Phe Glu Phe Phe Asp Arg Thr Glu Thr Arg Thr Asn Tyr Pro Asn Ile  
260 265 270

Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile His Trp  
275 280 285

Asn Ala Cys Ile Tyr Tyr Ala Ile Ser Lys Ser Ile Gly Phe Gly Val  
290 295 300

Asp	Thr	Trp	Val	Tyr	Pro	Asn	Ile	Thr	Asp	Pro	Glu	Tyr	Gly	Tyr	Leu	305	310	315	320
Ala	Arg	Glu	Tyr	Ile	Tyr	Cys	Leu	Tyr	Trp	Ser	Thr	Leu	Thr	Leu	Thr	325	330	335	
Thr	Ile	Gly	Glu	Thr	Pro	Pro	Pro	Val	Lys	Asp	Glu	Glu	Tyr	Leu	Phe	340	345	350	
Val	Ile	Phe	Asp	Phe	Leu	Ile	Gly	Val	Leu	Ile	Phe	Ala	Thr	Ile	Val	355	360	365	
Gly	Asn	Val	Gly	Ser	Met	Ile	Ser	Asn	Met	Asn	Ala	Thr	Arg	Ala	Glu	370	375	380	
Phe	Gln	Ala	Lys	Ile	Asp	Ala	Val	Lys	His	Tyr	Met	Gln	Phe	Arg	Lys	385	390	395	400
Val	Ser	Lys	Gly	Met	Glu	Ala	Lys	Val	Ile	Arg	Trp	Phe	Asp	Tyr	Leu	405	410	415	
Trp	Thr	Asn	Lys	Lys	Thr	Val	Asp	Glu	Arg	Glu	Ile	Leu	Lys	Asn	Leu	420	425	430	
Pro	Ala	Lys	Leu	Arg	Ala	Glu	Ile	Ala	Ile	Asn	Val	His	Leu	Ser	Thr	435	440	445	
Leu	Lys	Lys	Val	Arg	Ile	Phe	His	Asp	Cys	Glu	Ala	Gly	Leu	Leu	Val	450	455	460	
Glu	Leu	Val	Leu	Lys	Leu	Arg	Pro	Gln	Val	Phe	Ser	Pro	Gly	Asp	Tyr	465	470	475	480
Ile	Cys	Arg	Lys	Gly	Asp	Ile	Gly	Lys	Glu	Met	Tyr	Ile	Ile	Lys	Glu	485	490	495	
Gly	Lys	Leu	Ala	Val	Val	Ala	Asp	Asp	Gly	Val	Thr	Gln	Tyr	Ala	Leu	500	505	510	
Leu	Ser	Ala	Gly	Ser	Cys	Phe	Gly	Glu	Ile	Ser	Ile	Leu	Asn	Ile	Lys	515	520	525	
Gly	Ser	Lys	Met	Gly	Asn	Arg	Arg	Thr	Ala	Asn	Ile	Arg	Ser	Leu	Gly	530	535	540	
Tyr	Ser	Asp	Leu	Phe	Cys	Leu	Ser	Lys	Asp	Asp	Leu	Met	Glu	Ala	Val	545	550	555	560
Thr	Glu	Tyr	Pro	Asp	Ala	Lys	Lys	Val	Leu	Glu	Glu	Arg	Gly	Arg	Glu	565	570	575	
Ile	Leu	Met	Lys	Glu	Gly	Leu	Leu	Asp	Glu	Asn	Glu	Val	Ala	Thr	Ser	580	585	590	
Met	Glu	Val	Asp	Val	Gln	Glu	Lys	Leu	Gly	Gln	Leu	Glu	Thr	Asn	Met	595	600	605	

Glu Thr Leu Tyr Thr Arg Phe Gly Arg Leu Leu Ala Glu Tyr Thr Gly  
 610 615 620  
 Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr Lys Met  
 625 630 635 640  
 Lys Gln Asn Asn Glu Asp Asp Tyr Leu Ser Asp Gly Met Asn Ser Pro  
 645 650 655  
 Glu Leu Ala Ala Ala Asp Glu Pro  
 660

<210> 11  
 <211> 694  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> MISC\_FEATURE  
 <222> (1)..(694)  
 <223> CNGA3

<400> 11  
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 1 5 10 15  
 Lys Val Lys Thr Ser Asp Arg Asp Leu Asn Arg Ala Glu Asn Gly Leu  
 20 25 30  
 Ser Arg Ala His Ser Ser Ser Glu Glu Thr Ser Ser Val Leu Gln Pro  
 35 40 45  
 Gly Ile Ala Met Glu Thr Arg Gly Leu Ala Asp Ser Gly Gln Gly Ser  
 50 55 60  
 Phe Thr Gly Gln Gly Ile Ala Arg Leu Ser Arg Leu Ile Phe Leu Leu  
 65 70 75 80  
 Arg Arg Trp Ala Ala Arg His Val His His Gln Asp Gln Gly Pro Asp  
 85 90 95  
 Ser Phe Pro Asp Arg Phe Arg Gly Ala Glu Leu Lys Glu Val Ser Ser  
 100 105 110  
 Gln Glu Ser Asn Ala Gln Ala Asn Val Gly Ser Gln Glu Pro Ala Asp  
 115 120 125  
 Arg Gly Arg Ser Ala Trp Pro Leu Ala Lys Cys Asn Thr Asn Thr Ser  
 130 135 140  
 Asn Asn Thr Glu Glu Glu Lys Lys Thr Lys Lys Lys Asp Ala Ile Val  
 145 150 155 160  
 Val Asp Pro Ser Ser Asn Leu Tyr Tyr Arg Trp Leu Thr Ala Ile Ala  
 165 170 175

Leu Pro Val Phe Tyr Asn Trp Tyr Leu Leu Ile Cys Arg Ala Cys Phe  
 180 185 190  
 Asp Glu Leu Gln Ser Glu Tyr Leu Met Leu Trp Leu Val Leu Asp Tyr  
 195 200 205  
 Ser Ala Asp Val Leu Tyr Val Leu Asp Val Leu Val Arg Ala Arg Thr  
 210 215 220  
 Gly Phe Leu Glu Gln Gly Leu Met Val Ser Asp Thr Asn Arg Leu Trp  
 225 230 235 240  
 Gln His Tyr Lys Thr Thr Thr Gln Phe Lys Leu Asp Val Leu Ser Leu  
 245 250 255  
 Val Pro Thr Asp Leu Ala Tyr Leu Lys Val Gly Thr Asn Tyr Pro Glu  
 260 265 270  
 Val Arg Phe Asn Arg Leu Leu Lys Phe Ser Arg Leu Phe Glu Phe Phe  
 275 280 285  
 Asp Arg Thr Glu Thr Arg Thr Asn Tyr Pro Asn Met Phe Arg Ile Gly  
 290 295 300  
 Asn Leu Val Leu Tyr Ile Leu Ile Ile Ile His Trp Asn Ala Cys Ile  
 305 310 315 320  
 Tyr Phe Ala Ile Ser Lys Phe Ile Gly Phe Gly Thr Asp Ser Trp Val  
 325 330 335  
 Tyr Pro Asn Ile Ser Ile Pro Glu His Gly Arg Leu Ser Arg Lys Tyr  
 340 345 350  
 Ile Tyr Ser Leu Tyr Trp Ser Thr Leu Thr Leu Thr Thr Ile Gly Glu  
 355 360 365  
 Thr Pro Pro Pro Val Lys Asp Glu Glu Tyr Leu Phe Val Val Val Asp  
 370 375 380  
 Phe Leu Val Gly Val Leu Ile Phe Ala Thr Ile Val Gly Asn Val Gly  
 385 390 395 400  
 Ser Met Ile Ser Asn Met Asn Ala Ser Arg Ala Glu Phe Gln Ala Lys  
 405 410 415  
 Ile Asp Ser Ile Lys Gln Tyr Met Gln Phe Arg Lys Val Thr Lys Asp  
 420 425 430  
 Leu Glu Thr Arg Val Ile Arg Trp Phe Asp Tyr Leu Trp Ala Asn Lys  
 435 440 445  
 Lys Thr Val Asp Glu Lys Glu Val Leu Lys Ser Leu Pro Asp Lys Leu  
 450 455 460  
 Lys Ala Glu Ile Ala Ile Asn Val His Leu Asp Thr Leu Lys Lys Val  
 465 470 475 480

Arg Ile Phe Gln Asp Cys Glu Ala Gly Leu Leu Val Glu Leu Val Leu  
 485 490 495  
 Lys Leu Arg Pro Thr Val Phe Ser Pro Gly Asp Tyr Ile Cys Lys Lys  
 500 505 510  
 Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile Asn Glu Gly Lys Leu Ala  
 515 520 525  
 Val Val Ala Asp Asp Gly Val Thr Gln Phe Val Val Leu Ser Asp Gly  
 530 535 540  
 Ser Tyr Phe Gly Glu Ile Ser Ile Leu Asn Ile Lys Gly Ser Lys Ser  
 545 550 555 560  
 Gly Asn Arg Arg Thr Ala Asn Ile Arg Ser Ile Gly Tyr Ser Asp Leu  
 565 570 575  
 Phe Cys Leu Ser Lys Asp Asp Leu Met Glu Ala Leu Thr Glu Tyr Pro  
 580 585 590  
 Glu Ala Lys Lys Ala Leu Glu Glu Lys Gly Arg Gln Ile Leu Met Lys  
 595 600 605  
 Asp Asn Leu Ile Asp Glu Glu Leu Ala Arg Ala Gly Ala Asp Pro Lys  
 610 615 620  
 Asp Leu Glu Glu Lys Val Glu Gln Leu Gly Ser Ser Leu Asp Thr Leu  
 625 630 635 640  
 Gln Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr Asn Ala Thr Gln Met  
 645 650 655  
 Lys Met Lys Gln Arg Leu Ser Gln Leu Glu Ser Gln Val Lys Gly Gly  
 660 665 670  
 Gly Asp Lys Pro Leu Ala Asp Gly Glu Val Pro Gly Asp Ala Thr Lys  
 675 680 685  
 Thr Glu Asp Lys Gln Gln  
 690

<210> 12  
 <211> 1245  
 <212> PRT  
 <213> Homo sapiens

<220>  
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 <222> (1) .. (1245)  
 <223> CNGB1

<400> 12  
 Met Leu Gly Trp Val Gln Arg Val Leu Pro Gln Pro Pro Gly Thr Pro  
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Arg	Lys	Thr	Lys	Met	Gln	Glu	Glu	Glu	Glu	Val	Glu	Pro	Glu	Pro	Glu		
			20					25					30				
Met	Glu	Ala	Glu	Val	Glu	Pro	Glu	Pro	Asn	Pro	Glu	Glu	Ala	Glu	Thr		
		35					40				45						
Glu	Ser	Glu	Ser	Met	Pro	Pro	Glu	Glu	Ser	Phe	Lys	Glu	Glu	Glu	Val		
	50					55					60						
Ala	Val	Ala	Asp	Pro	Ser	Pro	Gln	Glu	Thr	Lys	Glu	Ala	Ala	Leu	Thr		
65					70					75					80		
Ser	Thr	Ile	Ser	Leu	Arg	Ala	Gln	Gly	Ala	Glu	Ile	Ser	Glu	Met	Asn		
				85					90					95			
Ser	Pro	Ser	His	Arg	Val	Leu	Thr	Trp	Leu	Met	Lys	Gly	Val	Glu	Lys		
			100					105					110				
Val	Ile	Pro	Gln	Pro	Val	His	Ser	Ile	Thr	Glu	Asp	Pro	Ala	Gln	Ile		
		115					120					125					
Leu	Gly	His	Gly	Ser	Thr	Gly	Asp	Thr	Gly	Cys	Thr	Asp	Glu	Pro	Asn		
	130					135					140						
Glu	Ala	Leu	Glu	Ala	Gln	Asp	Thr	Arg	Pro	Gly	Leu	Arg	Leu	Leu	Leu		
145					150					155					160		
Trp	Leu	Glu	Gln	Asn	Leu	Glu	Arg	Val	Leu	Pro	Gln	Pro	Pro	Lys	Ser		
				165					170					175			
Ser	Glu	Val	Trp	Arg	Asp	Glu	Pro	Ala	Val	Ala	Thr	Ala	Pro	Pro	Gly		
			180					185					190				
Arg	Pro	Gln	Glu	Met	Gly	Pro	Lys	Leu	Gln	Ala	Arg	Glu	Thr	Pro	Ser		
		195					200					205					
Leu	Pro	Thr	Pro	Ile	Pro	Leu	Gln	Pro	Lys	Glu	Glu	Pro	Lys	Glu	Ala		
	210					215					220						
Pro	Ala	Pro	Glu	Pro	Gln	Pro	Gly	Ser	Gln	Ala	Gln	Thr	Ser	Ser	Leu		
225					230					235					240		
Pro	Pro	Thr	Arg	Asp	Pro	Ala	Arg	Leu	Val	Ala	Trp	Val	Leu	His	Arg		
				245					250					255			
Leu	Glu	Met	Ala	Leu	Pro	Gln	Pro	Val	Leu	His	Gly	Lys	Ile	Gly	Glu		
			260					265					270				
Gln	Glu	Pro	Asp	Ser	Pro	Gly	Ile	Cys	Asp	Val	Gln	Thr	Ile	Ser	Ile		
		275					280					285					
Leu	Pro	Gly	Gly	Gln	Val	Glu	Pro	Asp	Leu	Val	Leu	Glu	Glu	Val	Glu		
	290					295					300						
Pro	Pro	Trp	Glu	Asp	Ala	His	Gln	Asp	Val	Ser	Thr	Ser	Pro	Gln	Gly		
305					310					315					320		

Thr Glu Val Val Pro Ala Tyr Glu Glu Glu Asn Lys Ala Val Glu Lys  
 325 330 335  
 Met Pro Arg Glu Leu Ser Arg Ile Glu Glu Glu Lys Glu Asp Glu Glu  
 340 345 350  
 Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Val Thr Glu  
 355 360 365  
 Val Leu Leu Asp Ser Cys Val Val Ser Gln Val Gly Val Gly Gln Ser  
 370 375 380  
 Glu Glu Asp Gly Thr Arg Pro Gln Ser Thr Ser Asp Gln Lys Leu Trp  
 385 390 395 400  
 Glu Glu Val Gly Glu Glu Ala Lys Lys Glu Ala Glu Glu Lys Ala Lys  
 405 410 415  
 Glu Glu Ala Glu Glu Val Ala Glu Glu Glu Ala Glu Lys Glu Pro Gln  
 420 425 430  
 Asp Trp Ala Glu Thr Lys Glu Glu Pro Glu Ala Glu Ala Glu Ala Ala  
 435 440 445  
 Ser Ser Gly Val Pro Ala Thr Lys Gln His Pro Glu Val Gln Val Glu  
 450 455 460  
 Asp Thr Asp Ala Asp Ser Cys Pro Leu Met Ala Glu Glu Asn Pro Pro  
 465 470 475 480  
 Ser Thr Val Leu Pro Pro Pro Ser Pro Ala Lys Ser Asp Thr Leu Ile  
 485 490 495  
 Val Pro Ser Ser Ala Ser Gly Thr His Arg Lys Lys Leu Pro Ser Glu  
 500 505 510  
 Asp Asp Glu Ala Glu Glu Leu Lys Ala Leu Ser Pro Ala Glu Ser Pro  
 515 520 525  
 Val Val Ala Trp Ser Asp Pro Thr Thr Pro Lys Asp Thr Asp Gly Gln  
 530 535 540  
 Asp Arg Ala Ala Ser Thr Ala Ser Thr Asn Ser Ala Ile Ile Asn Asp  
 545 550 555 560  
 Arg Leu Gln Glu Leu Val Lys Leu Phe Lys Glu Arg Thr Glu Lys Val  
 565 570 575  
 Lys Glu Lys Leu Ile Asp Pro Asp Val Thr Ser Asp Glu Glu Ser Pro  
 580 585 590  
 Lys Pro Ser Pro Ala Lys Lys Ala Pro Glu Pro Ala Pro Asp Thr Lys  
 595 600 605  
 Pro Ala Glu Ala Glu Pro Val Glu Glu Glu His Tyr Cys Asp Met Leu



610					615					620					
Cys	Cys	Lys	Phe	Lys	His	Arg	Pro	Trp	Lys	Lys	Tyr	Gln	Phe	Pro	Gln
625					630					635					640
Ser	Ile	Asp	Pro	Leu	Thr	Asn	Leu	Met	Tyr	Val	Leu	Trp	Leu	Phe	Phe
				645					650					655	
Val	Val	Met	Ala	Trp	Asn	Trp	Asn	Cys	Trp	Leu	Ile	Pro	Val	Arg	Trp
			660					665					670		
Ala	Phe	Pro	Tyr	Gln	Thr	Pro	Asp	Asn	Ile	His	His	Trp	Leu	Leu	Met
		675					680					685			
Asp	Tyr	Leu	Cys	Asp	Leu	Ile	Tyr	Phe	Leu	Asp	Ile	Thr	Val	Phe	Gln
	690					695					700				
Thr	Arg	Leu	Gln	Phe	Val	Arg	Gly	Gly	Asp	Ile	Ile	Thr	Asp	Lys	Lys
705						710					715				720
Asp	Met	Arg	Asn	Asn	Tyr	Leu	Lys	Ser	Arg	Arg	Phe	Lys	Met	Asp	Leu
				725					730					735	
Leu	Ser	Leu	Leu	Pro	Leu	Asp	Phe	Leu	Tyr	Leu	Lys	Val	Gly	Val	Asn
			740					745					750		
Pro	Leu	Leu	Arg	Leu	Pro	Arg	Cys	Leu	Lys	Tyr	Met	Ala	Phe	Phe	Glu
		755					760					765			
Phe	Asn	Ser	Arg	Leu	Glu	Ser	Ile	Leu	Ser	Lys	Ala	Tyr	Val	Tyr	Arg
	770					775					780				
Val	Ile	Arg	Thr	Thr	Ala	Tyr	Leu	Leu	Tyr	Ser	Leu	His	Leu	Asn	Ser
785						790					795				800
Cys	Leu	Tyr	Tyr	Trp	Ala	Ser	Ala	Tyr	Gln	Gly	Leu	Gly	Ser	Thr	His
				805					810					815	
Trp	Val	Tyr	Asp	Gly	Val	Gly	Asn	Ser	Tyr	Ile	Arg	Cys	Tyr	Tyr	Phe
			820					825					830		
Ala	Val	Lys	Thr	Leu	Ile	Thr	Ile	Gly	Gly	Leu	Pro	Asp	Pro	Lys	Thr
		835					840					845			
Leu	Phe	Glu	Ile	Val	Phe	Gln	Leu	Leu	Asn	Tyr	Phe	Thr	Gly	Val	Phe
	850					855					860				
Ala	Phe	Ser	Val	Met	Ile	Gly	Gln	Met	Arg	Asp	Val	Val	Gly	Ala	Ala
865						870					875				880
Thr	Ala	Gly	Gln	Thr	Tyr	Tyr	Arg	Ser	Cys	Met	Asp	Ser	Thr	Val	Lys
				885					890					895	
Tyr	Met	Asn	Phe	Tyr	Lys	Ile	Pro	Lys	Ser	Val	Gln	Asn	Arg	Val	Lys
		900						905					910		
Thr	Trp	Tyr	Glu	Tyr	Thr	Trp	His	Ser	Gln	Gly	Met	Leu	Asp	Glu	Ser

915					920					925					
Glu	Leu	Met	Val	Gln	Leu	Pro	Asp	Lys	Met	Arg	Leu	Asp	Leu	Ala	Ile
930						935					940				
Asp	Val	Asn	Tyr	Asn	Ile	Val	Ser	Lys	Val	Ala	Leu	Phe	Gln	Gly	Cys
945					950					955					960
Asp	Arg	Gln	Met	Ile	Phe	Asp	Met	Leu	Lys	Arg	Leu	Arg	Ser	Val	Val
				965					970					975	
Tyr	Leu	Pro	Asn	Asp	Tyr	Val	Cys	Lys	Lys	Gly	Glu	Ile	Gly	Arg	Glu
			980					985					990		
Met	Tyr	Ile	Ile	Gln	Ala	Gly	Gln	Val	Gln	Val	Leu	Gly	Gly	Pro	Asp
		995					1000					1005			
Gly	Lys	Ser	Val	Leu	Val	Thr	Leu	Lys	Ala	Gly	Ser	Val	Phe	Gly	
	1010					1015					1020				
Glu	Ile	Ser	Leu	Leu	Ala	Val	Gly	Gly	Gly	Asn	Arg	Arg	Thr	Ala	
	1025					1030					1035				
Asn	Val	Val	Ala	His	Gly	Phe	Thr	Asn	Leu	Phe	Ile	Leu	Asp	Lys	
	1040					1045					1050				
Lys	Asp	Leu	Asn	Glu	Ile	Leu	Val	His	Tyr	Pro	Glu	Ser	Gln	Lys	
	1055					1060					1065				
Leu	Leu	Arg	Lys	Lys	Ala	Arg	Arg	Met	Leu	Arg	Ser	Asn	Asn	Lys	
	1070					1075					1080				
Pro	Lys	Glu	Glu	Lys	Ser	Val	Leu	Ile	Leu	Pro	Pro	Arg	Ala	Gly	
	1085					1090					1095				
Thr	Pro	Lys	Leu	Phe	Asn	Ala	Ala	Leu	Ala	Met	Thr	Gly	Lys	Met	
	1100					1105					1110				
Gly	Gly	Lys	Gly	Ala	Lys	Gly	Gly	Lys	Leu	Ala	His	Leu	Arg	Ala	
	1115					1120					1125				
Arg	Leu	Lys	Glu	Leu	Ala	Ala	Leu	Glu	Ala	Ala	Ala	Lys	Gln	Gln	
	1130					1135					1140				
Glu	Leu	Val	Glu	Gln	Ala	Lys	Ser	Ser	Gln	Asp	Val	Lys	Gly	Glu	
	1145					1150					1155				
Glu	Gly	Ser	Ala	Ala	Pro	Asp	Gln	His	Thr	His	Pro	Lys	Glu	Ala	
	1160					1165					1170				
Ala	Thr	Asp	Pro	Pro	Ala	Pro	Arg	Thr	Pro	Pro	Glu	Pro	Pro	Gly	
	1175					1180					1185				
Ser	Pro	Pro	Ser	Ser	Pro	Pro	Pro	Ala	Ser	Leu	Gly	Arg	Pro	Glu	
	1190					1195					1200				
Gly	Glu	Glu	Glu	Gly	Pro	Ala	Glu	Pro	Glu	Glu	His	Ser	Val	Arg	

1205		1210		1215
Ile Cys Met Ser Pro Gly Pro Glu Pro Gly Glu Gln Ile Leu Ser				
1220		1225		1230
Val Lys Met Pro Glu Glu Arg Glu Glu Lys Ala Glu				
1235		1240		1245

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Pro Ser Lys Ala Arg Lys Leu Leu Pro Val Leu Asp Pro Ser Gly Asp
20                    25                    30
Tyr Tyr Tyr Trp Trp Leu Asn Thr Met Val Phe Pro Val Met Tyr Asn
35                    40                    45
Leu Ile Ile Leu Val Cys Arg Ala Cys Phe Pro Asp Leu Gln His Gly
50                    55                    60
Tyr Leu Val Ala Trp Leu Val Leu Asp Tyr Thr Ser Asp Leu Leu Tyr
65                    70                    75                    80
Leu Leu Asp Met Val Val Arg Phe His Thr Gly Phe Leu Glu Gln Gly
85                    90                    95
Ile Leu Val Val Asp Lys Gly Arg Ile Ser Ser Arg Tyr Val Arg Thr
100                    105                    110
Trp Ser Phe Phe Leu Asp Leu Ala Ser Leu Met Pro Thr Asp Val Val
115                    120                    125
Tyr Val Arg Leu Gly Pro His Thr Pro Thr Leu Arg Leu Asn Arg Phe
130                    135                    140
Leu Arg Ala Pro Arg Leu Phe Glu Ala Phe Asp Arg Thr Glu Thr Arg
145                    150                    155                    160
Thr Ala Tyr Pro Asn Ala Phe Arg Ile Ala Lys Leu Met Leu Tyr Ile
165                    170                    175
Phe Val Val Ile His Trp Asn Ser Cys Leu Tyr Phe Ala Leu Ser Arg
180                    185                    190
Tyr Leu Gly Phe Gly Arg Asp Ala Trp Val Tyr Pro Asp Pro Ala Gln

195					200					205					
Pro	Gly	Phe	Glu	Arg	Leu	Arg	Arg	Gln	Tyr	Leu	Tyr	Ser	Phe	Tyr	Phe
	210					215					220				
Ser	Thr	Leu	Ile	Leu	Thr	Thr	Val	Gly	Asp	Thr	Pro	Pro	Pro	Ala	Arg
	225					230					235				240
Glu	Glu	Glu	Tyr	Leu	Phe	Met	Val	Gly	Asp	Phe	Leu	Leu	Ala	Val	Met
				245					250					255	
Gly	Phe	Ala	Thr	Ile	Met	Gly	Ser	Met	Ser	Ser	Val	Ile	Tyr	Asn	Met
			260					265					270		
Asn	Thr	Ala	Asp	Ala	Ala	Phe	Tyr	Pro	Asp	His	Ala	Leu	Val	Lys	Lys
		275					280					285			
Tyr	Met	Lys	Leu	Gln	His	Val	Asn	Arg	Lys	Leu	Glu	Arg	Arg	Val	Ile
	290					295					300				
Asp	Trp	Tyr	Gln	His	Leu	Gln	Ile	Asn	Lys	Lys	Met	Thr	Asn	Glu	Val
	305					310					315				320
Ala	Ile	Leu	Gln	His	Leu	Pro	Glu	Arg	Leu	Arg	Ala	Glu	Val	Ala	Val
				325					330					335	
Ser	Val	His	Leu	Ser	Thr	Leu	Ser	Arg	Val	Gln	Ile	Phe	Gln	Asn	Cys
			340					345					350		
Glu	Ala	Ser	Leu	Leu	Glu	Glu	Leu	Val	Leu	Lys	Leu	Gln	Pro	Gln	Thr
	355						360					365			
Tyr	Ser	Pro	Gly	Glu	Tyr	Val	Cys	Arg	Lys	Gly	Asp	Ile	Gly	Gln	Glu
	370					375					380				
Met	Tyr	Ile	Ile	Arg	Glu	Gly	Gln	Leu	Ala	Val	Val	Ala	Asp	Asp	Gly
	385					390					395				400
Ile	Thr	Gln	Tyr	Ala	Val	Leu	Gly	Ala	Gly	Leu	Tyr	Phe	Gly	Glu	Ile
				405					410					415	
Ser	Ile	Ile	Asn	Ile	Lys	Gly	Asn	Met	Ser	Gly	Asn	Arg	Arg	Thr	Ala
			420					425					430		
Asn	Ile	Lys	Ser	Leu	Gly	Tyr	Ser	Asp	Leu	Phe	Cys	Leu	Ser	Lys	Glu
		435					440					445			
Asp	Leu	Arg	Glu	Val	Leu	Ser	Glu	Tyr	Pro	Gln	Ala	Gln	Thr	Ile	Met
	450					455					460				
Glu	Glu	Lys	Gly	Arg	Glu	Ile	Leu	Leu	Lys	Met	Asn	Lys	Leu	Asp	Val
	465					470					475				480
Asn	Ala	Glu	Ala	Ala	Glu	Ile	Ala	Leu	Gln	Glu	Ala	Thr	Glu	Ser	Arg
				485					490					495	
Leu	Arg	Gly	Leu	Asp	Gln	Gln	Leu	Asp	Asp	Leu	Gln	Thr	Lys	Phe	Ala

500	505	510
Arg Leu Leu Ala Glu Leu Glu Ser Ser Ala Leu Lys Ile Ala Tyr Arg		
515	520	525
Ile Glu Arg Leu Glu Trp Gln Thr Arg Glu Trp Pro Met Pro Glu Asp		
530	535	540
Leu Ala Glu Ala Asp Asp Glu Gly Glu Pro Glu Glu Gly Thr Ser Lys		
545	550	555
Asp Glu Glu Gly Arg Ala Ser Gln Glu Gly Pro Pro Gly Pro Glu		
565	570	575

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 <213> Homo sapiens

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 Asp Ser Tyr Thr Asp Arg Leu Tyr Leu Leu Trp Leu Leu Leu Val Thr  
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 Leu Ala Tyr Asn Trp Asn Cys Trp Phe Ile Pro Leu Arg Leu Val Phe  
 35 40 45  
 Pro Tyr Gln Thr Ala Asp Asn Ile His Tyr Trp Leu Ile Ala Asp Ile  
 50 55 60  
 Ile Cys Asp Ile Ile Tyr Leu Tyr Asp Met Leu Phe Ile Gln Pro Arg  
 65 70 75 80  
 Leu Gln Phe Val Arg Gly Gly Asp Ile Ile Val Asp Ser Asn Glu Leu  
 85 90 95  
 Arg Lys His Tyr Arg Thr Ser Thr Lys Phe Gln Leu Asp Val Ala Ser  
 100 105 110  
 Ile Ile Pro Phe Asp Ile Cys Tyr Leu Phe Phe Gly Phe Asn Pro Met  
 115 120 125  
 Phe Arg Ala Asn Arg Met Leu Lys Tyr Thr Ser Phe Phe Glu Phe Asn  
 130 135 140  
 His His Leu Glu Ser Ile Met Asp Lys Ala Tyr Ile Tyr Arg Val Ile  
 145 150 155 160  
 Arg Thr Thr Gly Tyr Leu Leu Phe Ile Leu His Ile Asn Ala Cys Val  
 165 170 175

Tyr	Tyr	Trp	Ala	Ser	Asn	Tyr	Glu	Gly	Ile	Gly	Thr	Thr	Arg	Trp	Val	180	185	190
Tyr	Asp	Gly	Glu	Gly	Asn	Glu	Tyr	Leu	Arg	Cys	Tyr	Tyr	Trp	Ala	Val	195	200	205
Arg	Thr	Leu	Ile	Thr	Ile	Gly	Gly	Leu	Pro	Glu	Pro	Gln	Thr	Leu	Phe	210	215	220
Glu	Ile	Val	Phe	Gln	Leu	Leu	Asn	Phe	Phe	Ser	Gly	Val	Phe	Val	Phe	225	230	235
Ser	Ser	Leu	Ile	Gly	Gln	Met	Arg	Asp	Val	Ile	Gly	Ala	Ala	Thr	Ala	245	250	255
Asn	Gln	Asn	Tyr	Phe	Arg	Ala	Cys	Met	Asp	Asp	Thr	Ile	Ala	Tyr	Met	260	265	270
Asn	Asn	Tyr	Ser	Ile	Pro	Lys	Leu	Val	Gln	Lys	Arg	Val	Arg	Thr	Trp	275	280	285
Tyr	Glu	Tyr	Thr	Trp	Asp	Ser	Gln	Arg	Met	Leu	Asp	Glu	Ser	Asp	Leu	290	295	300
Leu	Lys	Thr	Leu	Pro	Thr	Thr	Val	Gln	Leu	Ala	Leu	Ala	Ile	Asp	Val	305	310	315
Asn	Phe	Ser	Ile	Ile	Ser	Lys	Val	Asp	Leu	Phe	Lys	Gly	Cys	Asp	Thr	325	330	335
Gln	Met	Ile	Tyr	Asp	Met	Leu	Leu	Arg	Leu	Lys	Ser	Val	Leu	Tyr	Leu	340	345	350
Pro	Gly	Asp	Phe	Val	Cys	Lys	Lys	Gly	Glu	Ile	Gly	Lys	Glu	Met	Tyr	355	360	365
Ile	Ile	Lys	His	Gly	Glu	Val	Gln	Val	Leu	Gly	Gly	Pro	Asp	Gly	Thr	370	375	380
Lys	Val	Leu	Val	Thr	Leu	Lys	Ala	Gly	Ser	Val	Phe	Gly	Glu	Ile	Ser	385	390	395
Leu	Leu	Ala	Ala	Gly	Gly	Gly	Asn	Arg	Arg	Thr	Ala	Asn	Val	Val	Ala	405	410	415
His	Gly	Phe	Ala	Asn	Leu	Leu	Thr	Leu	Asp	Lys	Lys	Thr	Leu	Gln	Glu	420	425	430
Ile	Leu	Val	His	Tyr	Pro	Asp	Ser	Glu	Arg	Ile	Leu	Met	Lys	Lys	Ala	435	440	445
Arg	Val	Leu	Leu	Lys	Gln	Lys	Ala	Lys	Thr	Ala	Glu	Ala	Thr	Pro	Pro	450	455	460
Arg	Lys	Asp	Leu	Ala	Leu	Leu	Phe	Pro	Pro	Lys	Glu	Glu	Thr	Pro	Lys	465	470	475

Leu Phe Lys Thr Leu Leu Gly Gly Thr Gly Lys Ala Ser Leu Ala Arg  
 485 490 495  
 Leu Leu Lys Leu Lys Arg Glu Gln Ala Ala Gln Lys Lys Glu Asn Ser  
 500 505 510  
 Glu Gly Gly Glu Glu Glu Gly Lys Glu Asn Glu Asp Lys Gln Lys Glu  
 515 520 525  
 Asn Glu Asp Lys Gln Lys Glu Asn Glu Asp Lys Gly Lys Glu Asn Glu  
 530 535 540  
 Asp Lys Asp Lys Gly Arg Glu Pro Glu Glu Lys Pro Leu Asp Arg Pro  
 545 550 555 560  
 Glu Cys Thr Ala Ser Pro Ile Ala Val Glu Glu Glu Pro His Ser Val  
 565 570 575  
 Arg Arg Thr Val Leu Pro Arg Gly Thr Ser Arg Gln Ser Leu Ile Ile  
 580 585 590  
 Ser Met Ala Pro Ser Ala Glu Gly Gly Glu Glu Val Leu Thr Ile Glu  
 595 600 605  
 Val Lys Glu Lys Ala Lys Gln  
 610 615

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 <212> PRT  
 <213> Mus musculus

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 <222> (1)..(664)  
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 His Asn His His Pro Pro Pro Ser Ile Lys Ala Asn Gly Lys Asp Asp  
 20 25 30  
 His Arg Ala Gly Ser Arg Pro Gln Ser Val Ala Ala Asp Asp Asp Thr  
 35 40 45  
 Ser Ser Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly  
 50 55 60  
 Arg Gly Gly Phe Arg Arg Ile Val Arg Leu Val Gly Ile Ile Arg Asp  
 65 70 75 80  
 Trp Ala Asn Lys Asn Phe Arg Glu Glu Glu Pro Arg Pro Asp Ser Phe  
 85 90 95

Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Pro His Gln  
 100 105 110  
 Gly Asp Gly Lys Gly Asp Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys  
 115 120 125  
 Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg  
 130 135 140  
 Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu  
 145 150 155 160  
 Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Asn Tyr Phe Val Val  
 165 170 175  
 Trp Leu Val Leu Asp Tyr Phe Ser Asp Thr Val Tyr Ile Ala Asp Leu  
 180 185 190  
 Ile Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys  
 195 200 205  
 Asp Pro Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys  
 210 215 220  
 Leu Asp Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val  
 225 230 235 240  
 Gly Ile His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala  
 245 250 255  
 Arg Met Phe Glu Phe Phe Asp Arg Thr Glu Thr Arg Thr Ser Tyr Pro  
 260 265 270  
 Asn Ile Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile  
 275 280 285  
 His Trp Asn Ala Cys Ile Tyr Tyr Ala Ile Ser Lys Ser Ile Gly Phe  
 290 295 300  
 Gly Val Asp Thr Trp Val Tyr Pro Asn Ile Thr Asp Pro Glu Tyr Gly  
 305 310 315 320  
 Tyr Leu Ala Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr  
 325 330 335  
 Leu Thr Thr Ile Gly Glu Thr Pro Pro Pro Val Lys Asp Glu Glu Tyr  
 340 345 350  
 Leu Phe Phe Ile Phe Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr  
 355 360 365  
 Ile Val Gly Asn Val Gly Ser Met Ile Ser Asn Met Asn Ala Thr Arg  
 370 375 380  
 Ala Glu Phe Gln Ala Lys Ile Asp Ala Val Lys His Tyr Met Gln Phe  
 385 390 395 400



Arg Lys Val Ser Lys Asp Met Glu Ala Lys Val Ile Lys Trp Phe Asp  
 405 410 415  
 Tyr Leu Trp Thr Asn Lys Lys Thr Val Asp Glu Arg Glu Val Leu Lys  
 420 425 430  
 Asn Leu Pro Ala Lys Leu Arg Ala Glu Ile Ala Ile Asn Val His Leu  
 435 440 445  
 Ser Thr Leu Lys Lys Val Arg Ile Phe Gln Asp Cys Glu Ala Gly Leu  
 450 455 460  
 Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Phe Ser Pro Gly  
 465 470 475 480  
 Asp Tyr Ile Cys Arg Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile  
 485 490 495  
 Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr  
 500 505 510  
 Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile Leu Asn  
 515 520 525  
 Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Gly Thr Ile Arg Ser  
 530 535 540  
 Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu  
 545 550 555 560  
 Ala Val Thr Glu Tyr Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly  
 565 570 575  
 Arg Glu Ile Leu Met Lys Glu Gly Leu Leu Asp Glu Asn Glu Val Ala  
 580 585 590  
 Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr  
 595 600 605  
 Asn Met Glu Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr  
 610 615 620  
 Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr  
 625 630 635 640  
 Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn  
 645 650 655  
 Thr Pro Glu Pro Ala Val Ala Glu  
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 <212> PRT  
 <213> Oryctolagus cuniculus

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<223> CNGA2

<400> 16

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Trp Arg Arg Ser Ala Ala Thr Arg Arg Ser Arg Arg Cys Leu Lys Thr  
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Lys Arg Lys Arg Trp Ser Ser Gly Lys Gly Thr Pro Met Gln Ser Thr  
35 40 45

Gln Cys Glu Thr Arg Arg Arg Ala Gln Thr Pro Cys Glu Ser Thr Gly  
50 55 60

His Thr Trp Arg Met Thr Glu Lys Ser Asn Gly Val Lys Ser Ser Pro  
65 70 75 80

Ala Asn Asn His Asn Asn His Val Pro Ala Thr Ile Lys Ala Asn Gly  
85 90 95

Lys Asp Glu Ser Arg Thr Arg Ser Arg Pro Gln Ser Ala Ala Asp Asp  
100 105 110

Asp Thr Ser Ser Glu Leu Gln Arg Leu Ala Glu Met Asp Ala Pro Gln  
115 120 125

Gln Arg Arg Gly Gly Phe Arg Arg Ile Val Arg Leu Val Gly Val Ile  
130 135 140

Arg Gln Trp Ala Asn Arg Asn Phe Arg Glu Glu Glu Ala Arg Pro Asp  
145 150 155 160

Ser Phe Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr  
165 170 175

Gln Gln Gly Asp Gly Lys Gly Asp Lys Asp Gly Asp Gly Lys Gly Thr  
180 185 190

Lys Lys Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr  
195 200 205

Tyr Arg Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys  
210 215 220

Leu Leu Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Gly Tyr Phe  
225 230 235 240

Leu Val Trp Leu Val Leu Asp Tyr Phe Ser Asp Val Val Tyr Ile Ala  
245 250 255

Asp Leu Phe Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu  
260 265 270

Val	Lys	Asp	Pro	Lys	Lys	Leu	Arg	Asp	Asn	Tyr	Ile	His	Thr	Leu	Gln	275	280	285
Phe	Lys	Leu	Asp	Val	Ala	Ser	Ile	Ile	Pro	Thr	Asp	Leu	Ile	Tyr	Phe	290	295	300
Ala	Val	Gly	Ile	His	Asn	Pro	Glu	Leu	Arg	Phe	Asn	Arg	Leu	Leu	His	305	310	315
Phe	Ala	Arg	Met	Phe	Glu	Phe	Phe	Asp	Arg	Thr	Glu	Thr	Arg	Thr	Ser	325	330	335
Tyr	Pro	Asn	Ile	Phe	Arg	Ile	Ser	Asn	Leu	Val	Leu	Tyr	Ile	Leu	Val	340	345	350
Ile	Ile	His	Trp	Asn	Ala	Cys	Ile	Tyr	Tyr	Ala	Ile	Ser	Lys	Ser	Ile	355	360	365
Gly	Phe	Gly	Val	Asp	Thr	Trp	Val	Tyr	Pro	Asn	Ile	Thr	Asp	Pro	Glu	370	375	380
Tyr	Gly	Tyr	Leu	Ala	Arg	Glu	Tyr	Ile	Tyr	Cys	Leu	Tyr	Trp	Ser	Thr	385	390	395
Leu	Thr	Leu	Thr	Thr	Ile	Gly	Glu	Thr	Pro	Pro	Pro	Val	Lys	Asp	Glu	405	410	415
Glu	Tyr	Leu	Phe	Val	Ile	Phe	Asp	Phe	Leu	Ile	Gly	Val	Leu	Ile	Phe	420	425	430
Ala	Thr	Ile	Val	Gly	Asn	Val	Gly	Ser	Met	Ile	Ser	Asn	Met	Asn	Ala	435	440	445
Thr	Arg	Ala	Glu	Phe	Gln	Ala	Lys	Ile	Asp	Ala	Val	Lys	His	Tyr	Met	450	455	460
Gln	Phe	Arg	Lys	Val	Ser	Lys	Glu	Met	Glu	Ala	Lys	Val	Ile	Lys	Trp	465	470	475
Phe	Asp	Tyr	Leu	Trp	Thr	Asn	Lys	Lys	Thr	Val	Asp	Glu	Arg	Glu	Val	485	490	495
Leu	Lys	Asn	Leu	Pro	Ala	Lys	Leu	Arg	Ala	Glu	Ile	Ala	Ile	Asn	Val	500	505	510
His	Leu	Ser	Thr	Leu	Lys	Lys	Val	Arg	Ile	Phe	Gln	Asp	Cys	Glu	Ala	515	520	525
Gly	Leu	Leu	Val	Glu	Leu	Val	Leu	Lys	Leu	Arg	Pro	Gln	Val	Phe	Ser	530	535	540
Pro	Gly	Asp	Tyr	Ile	Cys	Arg	Lys	Gly	Asp	Ile	Gly	Lys	Glu	Met	Tyr	545	550	555
Ile	Ile	Lys	Glu	Gly	Lys	Leu	Ala	Val	Val	Ala	Asp	Asp	Gly	Val	Thr	565	570	575

Gln Tyr Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile  
 580 585 590  
 Leu Asn Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Ala Asn Ile  
 595 600 605  
 Arg Ser Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu  
 610 615 620  
 Met Glu Ala Val Thr Glu Tyr Pro Asp Ala Lys Lys Val Leu Glu Glu  
 625 630 635 640  
 Arg Gly Arg Glu Ile Leu Met Lys Glu Gly Leu Leu Asp Glu Asn Glu  
 645 650 655  
 Val Ala Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Lys Gln Leu  
 660 665 670  
 Glu Thr Asn Met Glu Thr Leu Tyr Thr Arg Phe Gly Arg Leu Leu Ala  
 675 680 685  
 Glu Tyr Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu  
 690 695 700  
 Glu Val Lys Met Lys Gln Asn Thr Glu Asp Asp Tyr Leu Ser Asp Gly  
 705 710 715 720  
 Met Asn Ser Pro Glu Pro Ala Ala Ala Glu Gln Pro  
 725 730

<210> 17  
 <211> 663  
 <212> PRT  
 <213> Bos taurus

<220>  
 <221> MISC\_FEATURE  
 <222> (1)..(663)  
 <223> CNGA2

<400> 17  
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 1 5 10 15  
 Asn His His Ala Pro Pro Ala Ile Lys Ala Ser Gly Lys Asp Asp His  
 20 25 30  
 Arg Ala Ser Ser Arg Pro Gln Ser Ala Ala Ala Asp Asp Thr Ser Ser  
 35 40 45  
 Glu Leu Gln Gln Leu Ala Glu Met Asp Ala Pro Gln Gln Arg Arg Gly  
 50 55 60  
 Gly Phe Arg Arg Ile Ala Arg Leu Val Gly Val Leu Arg Glu Trp Ala  
 65 70 75 80

Tyr Arg Asn Phe Arg Glu Glu Glu Pro Arg Pro Asp Ser Phe Leu Glu  
85 90 95  
Arg Phe Arg Gly Pro Glu Leu His Thr Val Thr Thr Gln Gln Gly Asp  
100 105 110  
Gly Lys Gly Asp Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys Lys Phe  
115 120 125  
Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg Trp Leu  
130 135 140  
Phe Leu Ile Ala Leu Pro Val Leu Tyr Asn Trp Cys Leu Leu Val Ala  
145 150 155 160  
Arg Ala Cys Phe Ser Asp Leu Gln Lys Gly Tyr Tyr Ile Val Trp Leu  
165 170 175  
Val Leu Asp Tyr Val Ser Asp Val Val Tyr Ile Ala Asp Leu Phe Ile  
180 185 190  
Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys Asp Thr  
195 200 205  
Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Met Gln Phe Lys Leu Asp  
210 215 220  
Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val Gly Ile  
225 230 235 240  
His Asn Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala Arg Met  
245 250 255  
Phe Glu Phe Phe Asp Arg Thr Glu Thr Arg Thr Ser Tyr Pro Asn Ile  
260 265 270  
Phe Arg Ile Ser Asn Leu Ile Leu Tyr Ile Leu Ile Ile Ile His Trp  
275 280 285  
Asn Ala Cys Ile Tyr Tyr Ala Ile Ser Lys Ser Ile Gly Phe Gly Val  
290 295 300  
Asp Thr Trp Val Tyr Pro Asn Ile Thr Asp Pro Glu Tyr Gly Tyr Leu  
305 310 315 320  
Ser Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr Leu Thr  
325 330 335  
Thr Ile Gly Glu Thr Pro Pro Pro Val Lys Asp Glu Glu Tyr Leu Phe  
340 345 350  
Val Ile Phe Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr Ile Val  
355 360 365  
Gly Asn Val Gly Ser Met Ile Ser Asn Met Asn Ala Thr Arg Ala Glu  
370 375 380

Phe	Gln	Ala	Lys	Ile	Asp	Ala	Val	Lys	His	Tyr	Met	Gln	Phe	Arg	Lys	385	390	395	400
Val	Ser	Lys	Glu	Met	Glu	Ala	Lys	Val	Ile	Arg	Trp	Phe	Asp	Tyr	Leu	405	410	415	
Trp	Thr	Asn	Lys	Lys	Ser	Val	Asp	Glu	Arg	Glu	Val	Leu	Lys	Asn	Leu	420	425	430	
Pro	Ala	Lys	Leu	Arg	Ala	Glu	Ile	Ala	Ile	Asn	Val	His	Leu	Ser	Thr	435	440	445	
Leu	Lys	Lys	Val	Arg	Ile	Phe	Gln	Asp	Cys	Glu	Ala	Gly	Leu	Leu	Val	450	455	460	
Glu	Leu	Val	Leu	Lys	Leu	Arg	Pro	Gln	Val	Phe	Ser	Pro	Gly	Asp	Tyr	465	470	475	480
Ile	Cys	Arg	Lys	Gly	Asp	Ile	Gly	Lys	Glu	Met	Tyr	Ile	Ile	Lys	Glu	485	490	495	
Gly	Lys	Leu	Ala	Val	Val	Ala	Asp	Asp	Gly	Val	Thr	Gln	Tyr	Ala	Leu	500	505	510	
Leu	Ser	Ala	Gly	Ser	Cys	Phe	Gly	Glu	Ile	Ser	Ile	Leu	Asn	Ile	Lys	515	520	525	
Gly	Ser	Lys	Met	Gly	Asn	Arg	Arg	Thr	Ala	Asn	Ile	Arg	Ser	Leu	Gly	530	535	540	
Tyr	Ser	Asp	Leu	Phe	Cys	Leu	Ser	Lys	Asp	Asp	Leu	Met	Glu	Ala	Val	545	550	555	560
Thr	Glu	Tyr	Pro	Asp	Ala	Lys	Arg	Val	Leu	Glu	Glu	Arg	Gly	Arg	Glu	565	570	575	
Ile	Leu	Met	Lys	Glu	Gly	Leu	Leu	Asp	Glu	Asn	Glu	Val	Ala	Ala	Ser	580	585	590	
Met	Glu	Val	Asp	Val	Gln	Glu	Lys	Leu	Glu	Gln	Leu	Glu	Thr	Asn	Met	595	600	605	
Asp	Thr	Leu	Tyr	Thr	Arg	Phe	Ala	Arg	Leu	Leu	Ala	Glu	Tyr	Thr	Gly	610	615	620	
Ala	Gln	Gln	Lys	Leu	Lys	Gln	Arg	Ile	Thr	Val	Leu	Glu	Thr	Lys	Met	625	630	635	640
Lys	Gln	Asn	Asn	Glu	Asp	Asp	Ser	Leu	Ser	Asp	Gly	Met	Asn	Ser	Pro	645	650	655	
Glu	Pro	Pro	Ala	Glu	Lys	Pro										660			

<210> 18  
<211> 664

<212> PRT  
 <213> artificial  
  
 <220>  
 <223> mammalian CNGA2 consensus sequence  
  
 <220>  
 <221> MISC\_FEATURE  
 <222> (1)..(664)  
 <223> Xaa = any naturally occurring amino acid  
  
 <400> 18  
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 His Asn His His Ala Pro Pro Ala Ile Lys Ala Asn Gly Lys Asp Asp  
 20 25 30  
  
 His Arg Ala Gly Ser Arg Pro Gln Ser Xaa Ala Ala Asp Asp Asp Thr  
 35 40 45  
  
 Ser Ser Glu Leu Gln Arg Leu Ala Glu Met Asp Ala Pro Gln Gln Gly  
 50 55 60  
  
 Arg Gly Gly Phe Arg Arg Ile Val Arg Leu Val Gly Val Ile Arg Asp  
 65 70 75 80  
  
 Trp Ala Asn Lys Asn Phe Arg Glu Glu Glu Pro Arg Pro Asp Ser Phe  
 85 90 95  
  
 Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr Gln Gln  
 100 105 110  
  
 Gly Asp Gly Lys Gly Asp Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys  
 115 120 125  
  
 Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg  
 130 135 140  
  
 Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu  
 145 150 155 160  
  
 Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Gly Tyr Phe Val Val  
 165 170 175  
  
 Trp Leu Val Leu Asp Tyr Phe Ser Asp Val Val Tyr Ile Ala Asp Leu  
 180 185 190  
  
 Phe Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys  
 195 200 205  
  
 Asp Pro Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys  
 210 215 220  
  
 Leu Asp Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val  
 225 230 235 240

Gly	Ile	His	Ser	Pro	Glu	Val	Arg	Phe	Asn	Arg	Leu	Leu	His	Phe	Ala	245	250	255
Arg	Met	Phe	Glu	Phe	Phe	Asp	Arg	Thr	Glu	Thr	Arg	Thr	Ser	Tyr	Pro	260	265	270
Asn	Ile	Phe	Arg	Ile	Ser	Asn	Leu	Val	Leu	Tyr	Ile	Leu	Val	Ile	Ile	275	280	285
His	Trp	Asn	Ala	Cys	Ile	Tyr	Tyr	Ala	Ile	Ser	Lys	Ser	Ile	Gly	Phe	290	295	300
Gly	Val	Asp	Thr	Trp	Val	Tyr	Pro	Asn	Ile	Thr	Asp	Pro	Glu	Tyr	Gly	305	310	315
Tyr	Leu	Ala	Arg	Glu	Tyr	Ile	Tyr	Cys	Leu	Tyr	Trp	Ser	Thr	Leu	Thr	325	330	335
Leu	Thr	Thr	Ile	Gly	Glu	Thr	Pro	Pro	Pro	Val	Lys	Asp	Glu	Glu	Tyr	340	345	350
Leu	Phe	Val	Ile	Phe	Asp	Phe	Leu	Ile	Gly	Val	Leu	Ile	Phe	Ala	Thr	355	360	365
Ile	Val	Gly	Asn	Val	Gly	Ser	Met	Ile	Ser	Asn	Met	Asn	Ala	Thr	Arg	370	375	380
Ala	Glu	Phe	Gln	Ala	Lys	Ile	Asp	Ala	Val	Lys	His	Tyr	Met	Gln	Phe	385	390	395
Arg	Lys	Val	Ser	Lys	Asp	Met	Glu	Ala	Lys	Val	Ile	Lys	Trp	Phe	Asp	405	410	415
Tyr	Leu	Trp	Thr	Asn	Lys	Lys	Thr	Val	Asp	Glu	Arg	Glu	Val	Leu	Lys	420	425	430
Asn	Leu	Pro	Ala	Lys	Leu	Arg	Ala	Glu	Ile	Ala	Ile	Asn	Val	His	Leu	435	440	445
Ser	Thr	Leu	Lys	Lys	Val	Arg	Ile	Phe	Gln	Asp	Cys	Glu	Ala	Gly	Leu	450	455	460
Leu	Val	Glu	Leu	Val	Leu	Lys	Leu	Arg	Pro	Gln	Val	Phe	Ser	Pro	Gly	465	470	475
Asp	Tyr	Ile	Cys	Arg	Lys	Gly	Asp	Ile	Gly	Lys	Glu	Met	Tyr	Ile	Ile	485	490	495
Lys	Glu	Gly	Lys	Leu	Ala	Val	Val	Ala	Asp	Asp	Gly	Val	Thr	Gln	Tyr	500	505	510
Ala	Leu	Leu	Ser	Ala	Gly	Ser	Cys	Phe	Gly	Glu	Ile	Ser	Ile	Leu	Asn	515	520	525
Ile	Lys	Gly	Ser	Lys	Met	Gly	Asn	Arg	Arg	Thr	Ala	Asn	Ile	Arg	Ser	530	535	540



Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu  
 545 550 555 560  
 Ala Val Thr Glu Tyr Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly  
 565 570 575  
 Arg Glu Ile Leu Met Lys Glu Gly Leu Leu Asp Glu Asn Glu Val Ala  
 580 585 590  
 Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr  
 595 600 605  
 Asn Met Glu Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr  
 610 615 620  
 Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr  
 625 630 635 640  
 Lys Met Lys Gln Asn Asn Glu Asp Asp Tyr Leu Ser Asp Gly Met Asn  
 645 650 655  
 Ser Pro Phe Pro Ala Ala Ala Glu  
 660

<210> 19  
 <211> 821  
 <212> PRT  
 <213> artificial

<220>  
 <223> human CNGA and CNGB consensus sequence

<220>  
 <221> MISC\_FEATURE  
 <222> (1)..(821)  
 <223> Xaa = any naturally occurring amino acid

<400> 19  
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 1 5 10 15  
 Asn Leu Xaa Val Pro Xaa Xaa Glu Lys Ala Xaa Xaa Arg Ala Glu Asn  
 20 25 30  
 Xaa Gly Xaa Ser Arg Ala His Ser Xaa Ala Asp Asp Xaa Ala Ser Xaa  
 35 40 45  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Glu Xaa Glu Xaa Leu Ala Asp Xaa Ala  
 50 55 60  
 Xaa Gly Ser Phe Ser Gly Xaa Gly Xaa Arg Lys Xaa Xaa Xaa Xaa Xaa  
 65 70 75 80  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 85 90 95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg Leu  
 100 105 110  
 Xaa Xaa Leu Xaa Arg Xaa Trp Ala Xaa Xaa Asn Val Arg Xaa Xaa Xaa  
 115 120 125  
 Pro Xaa Pro Asp Ser Glu Pro Glu Glu Phe Lys Xaa Xaa Xaa Xaa Xaa  
 130 135 140  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 145 150 155 160  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 165 170 175  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 180 185 190  
 Glu Leu Lys Glu Val Lys Ser Gln Asp Xaa Asp Val Lys Xaa Asp Glu  
 195 200 205  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 210 215 220  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 225 230 235 240  
 Xaa Ser Glu Asp Lys Lys Xaa Lys Lys Lys Xaa Xaa Xaa Xaa Xaa Lys  
 245 250 255  
 Leu Leu Xaa Val Ile Asp Pro Ser Gly Asp Xaa Leu Tyr Tyr Leu Trp  
 260 265 270  
 Leu Phe Xaa Ile Ala Leu Pro Val Asn Tyr Asn Trp Cys Leu Leu Val  
 275 280 285  
 Ala Arg Ala Cys Phe Pro Asp Leu Gln Ser Asp Tyr Leu His Tyr Trp  
 290 295 300  
 Leu Val Leu Asp Tyr Val Ser Asp Val Val Tyr Leu Leu Asp Met Xaa  
 305 310 315 320  
 Phe Val Arg Thr Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Val  
 325 330 335  
 Asp Thr Asn Lys Leu Arg Asn Asn Tyr Lys Thr Thr Leu Gln Phe Lys  
 340 345 350  
 Leu Asp Val Ala Ser Leu Ile Pro Thr Asp Leu Leu Tyr Leu Lys Val  
 355 360 365  
 Gly Xaa Asn Tyr Pro Glu Val Arg Leu Asn Arg Leu Leu Lys Phe Ser  
 370 375 380  
 Arg Leu Phe Glu Phe Phe Asp Arg Thr Glu Thr Arg Thr Asn Tyr Pro  
 385 390 395 400

Asn Ile Phe Arg Ile Ile Asn Leu Val Leu Tyr Ile Leu Val Ile Ile  
 405 410 415  
 His Trp Asn Ala Cys Val Tyr Tyr Ala Ile Ser Lys Tyr Ile Gly Phe  
 420 425 430  
 Gly Thr Asp Thr Trp Val Tyr Pro Gly Ile Gly Asp Pro Glu Phe Gly  
 435 440 445  
 Arg Leu Ala Arg Glu Tyr Ile Tyr Ser Leu Tyr Trp Ser Thr Leu Thr  
 450 455 460  
 Leu Thr Thr Ile Gly Glu Thr Pro Pro Pro Val Thr Asp Glu Glu Tyr  
 465 470 475 480  
 Val Phe Val Val Val Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr  
 485 490 495  
 Ile Val Gly Asn Met Gly Ser Val Ile Ser Asn Met Asn Ala Ala Arg  
 500 505 510  
 Ala Glu Phe Gln Ala Lys Ile Asp Ala Val Lys Gln Tyr Met Asn Phe  
 515 520 525  
 Arg Lys Val Ser Lys Asp Val Glu Lys Arg Val Ile Thr Trp Phe Asp  
 530 535 540  
 Tyr Leu Trp Thr Asn Lys Lys Thr Val Asp Glu Ser Glu Val Leu Lys  
 545 550 555 560  
 Xaa Leu Pro Asp Lys Leu Arg Ala Glu Ile Ala Ile Asn Val His Leu  
 565 570 575  
 Ser Thr Leu Ser Lys Val Arg Ile Phe Gln Asp Cys Glu Ala Gly Leu  
 580 585 590  
 Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Tyr Ser Pro Gly  
 595 600 605  
 Asp Tyr Val Cys Lys Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile  
 610 615 620  
 Lys Glu Gly Lys Leu Ala Val Val Ala Asp Xaa Asp Gly Val Thr Gln  
 625 630 635 640  
 Leu Val Val Leu Ser Ala Gly Ser Val Phe Gly Glu Ile Ser Ile Leu  
 645 650 655  
 Asn Ile Lys Gly Ser Lys Ser Gly Asn Arg Arg Thr Ala Asn Ile Val  
 660 665 670  
 Ser Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met  
 675 680 685  
 Glu Ala Leu Thr Glu Tyr Pro Asp Ala Lys Lys Ile Leu Glu Glu Lys  
 690 695 700

Gly	Arg	Glu	Ile	Leu	Met	Lys	Asp	Asn	Leu	Leu	Asp	Glu	Asn	Xaa	Ala	
705					710					715					720	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Ala	Gly	Xaa	Ala	Thr	Pro	
				725						730				735		
Lys	Asp	Leu	Glu	Glu	Lys	Leu	Gly	Gly	Leu	Gly	Lys	Ser	Xaa	Xaa	Xaa	
			740					745					750			
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Leu	Asp	Thr	Leu	Gln	Thr	Arg	Phe	Ala	Arg	
			755					760				765				
Leu	Leu	Ala	Glu	Tyr	Glu	Ala	Ala	Gln	Gln	Lys	Xaa	Xaa	Leu	Lys	Gln	
	770					775					780					
Arg	Leu	Ser	Xaa	Leu	Glu	Lys	Gln	Xaa	Lys	Glu	Gly	Xaa	Xaa	Xaa	Xaa	
785					790					795					800	
Asp	Xaa	Glu	Xaa	Ala	Asp	Asp	Glu	Gly	Glu	Pro	Asp	Glu	Xaa	Ala	Pro	
				805					810					815		
Xaa	Asp	Glu	Pro	Glu												
				820												